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Substitute Claims

C1  
1. (Currently Amended) A susceptor for minimizing or eliminating thermal gradients that affect a substrate wafer during epitaxial growth, said susceptor comprising:

a first susceptor portion formed from graphite coated with silicon carbide and including a surface for receiving a semiconductor substrate wafer thereon; and

a second susceptor portion formed from graphite coated with silicon carbide, said second susceptor portion facing said substrate-receiving surface and spaced from said substrate-receiving surface, said spacing being sufficiently large to permit the flow of gases therebetween for epitaxial growth on a substrate wafer on said surface, while small enough for said second susceptor to heat the exposed face of a substrate wafer to substantially the same temperature as said first susceptor portion heats the face of a substrate wafer that is in direct contact with said substrate-receiving surface and thereby minimize or substantially eliminate radial and axial temperature gradients across a substrate wafer.

2. (Original) A barrel-type susceptor according to Claim 1.

3. (Original) A pancake-type susceptor according to Claim 1.

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

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8. (Cancelled)

9. (Cancelled)

10. (Original) A susceptor according to Claim 1 wherein said substrate receiving surface further comprises a plurality of wafer pockets.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

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21. (Currently Amended) A chemical vapor deposition system comprising:  
a reactor vessel formed of a material substantially transparent to electromagnetic radiation;

a gas supply system in fluid communication with said reactor vessel;

a source of electromagnetic radiation external to said reaction vessel; and

a susceptor within said reaction vessel, and formed of a material that is thermally responsive to electromagnetic radiation, said susceptor comprising,

a first susceptor portion formed from graphite coated with silicon carbide and including a surface for receiving a semiconductor substrate wafer thereon; and

a second susceptor portion formed from graphite coated with silicon carbide, said second susceptor portion facing said substrate-receiving surface and spaced from said substrate-receiving surface, said spacing being sufficiently large to permit the flow of gases therebetween for epitaxial growth on a substrate wafer on said surface, while small enough for said second susceptor to heat the exposed face of a substrate wafer to substantially the same temperature as said first susceptor portion heats the face of a substrate wafer that is in direct contact with said substrate-receiving surface and thereby minimize or substantially eliminate radial and axial temperature gradients across a substrate wafer.

22. (Original) A chemical vapor deposition system according to Claim 21 wherein said reaction vessel is made of quartz.

23. (Cancelled)

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*24*  
24. (Original) A chemical vapor deposition system according to Claim 21 wherein said source of electromagnetic radiation comprises an induction coil surrounding said reaction vessel.

25. (Cancelled)

26. (Cancelled)

*27*  
27. (Cancelled)

*28*  
28. (Cancelled)

29. (Original) A chemical vapor deposition system according to Claim 21 wherein said substrate receiving surface on said first substrate portion comprises a plurality of wafer pockets.

30. (Original) A chemical vapor deposition system according to Claim 21 wherein said susceptor comprises:

a cylinder formed of a plurality of adjacent straight sidewall sections that define the cylinder; and

a plurality of wafer pockets on the inner circumference of said cylinder.

31. (Original) A chemical vapor deposition system according to Claim 21 wherein said first susceptor portion comprises a first cylinder formed of a plurality of adjacent straight sidewall sections that define the cylinder; and

a plurality of wafer pockets on the outer surface of said sidewall sections; and

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~~said second susceptor portion comprises a second cylinder surrounding said first cylinder and defining an annular space between said first and second cylinders, with the annular space between said first and second cylinders being sufficiently large to permit the flow of gases therebetween for epitaxial growth on substrates in said wafer pockets, while small enough for said second cylinder to heat the exposed face of substrates to substantially the same temperature as said first cylinder heats the faces of substrates that are in direct contact with said first cylinder.~~

32. (Original) A chemical vapor deposition system according to Claim 21 wherein said first susceptor portion is a horizontal platform having a top surface for receiving semiconductor substrate wafers thereon; and

~~said second susceptor portion is parallel to and spaced above said wafer-receiving surface of said first susceptor portion, said spacing being sufficiently large to permit the flow of gases therebetween for epitaxial growth on a substrate on said surface, while small enough for said second susceptor portion to heat the exposed face of a substrate to substantially the same temperature as said first susceptor portion heats the face of a substrate that is in direct contact with said substrate-receiving surface.~~

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

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38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Cancelled)

44. (Cancelled)

45. (Cancelled)

46. (Cancelled)

47. (Cancelled)

48. (Cancelled)

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